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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/590,308	03/20/2007	Ryu Kitamura	SHIGA3.012APC	7167

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EXAMINER	
SCHIRO, RYAN RAYMOND	
ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
04/13/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary	Application No.	Applicant(s)	
	10/590,308	KITAMURA ET AL.	
	Examiner	Art Unit	
	RYAN SCHIRO	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/08/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-16 are pending and presented for examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamatsu (US6071851).

4. Wakamatsu teaches a heat-sensitive recording material and method for producing the same which has an intermediate layer that has high sensitivity and can be obtained using a latex having a temperature sensitive gelling characteristic as a binder by adjusting the temperature of the coating solution at the time of preparation and coating to a temperature lower at least 20 degrees Celsius than the gelling temperature, as required by claims 1, 2 and 15 (abstract). The sheet coated by the method of Wakamutsu is a heat sensitive recording material, as required by claims 13 and 14 (abstract). The layer is specifically to be used for heat-sensitive facsimiles and printers, which can typically be of the inkjet type, to make it possible to carry out high speed recording, as required by claim 14 (col. 1, lines 24-37). Methods may be used to apply heat to the support per se just before coating by heating and thereafter coating the coating solution (col. 9, lines 1-15). Specifically the latexes are those described in JP-A-9-31138 and they are temperature sensitive thickening latexes comprising an aqueous dispersion of water insoluble polymer obtained by polymerizing a monomer in the presence of a thermally reversible polymer which reversibly changes in hydrophilicity and hydrophobicity at a certain temperature as a boundary inbetween, as requried by claims 1, 2, 3, 7 and 15 (col. 4, lines 23-29). Inorganic or organic pigments may be included in the intermediate layer, as required by claim 5 (col. 3, line 55). Inorganic fine hollow particles can be included in the intermediate layer, as required by claim 9 (col. 3-4, lines 66-7). The temperature of the solution at the time of coating must be lower than the gelling temperature by 20 degrees Celsius or more, as required by claim 8 (col. 6, lines 30-40). The support used is generally paper, and resin films, synthetic papers, nonwoven fabrics and the like can be used (col. 8, lines 41-45). When the support is porous, such as the preferred paper substrate, an intermediate layer having good smoothness and better film property

can be formed by coating the intermediate layer at a temperature which is not lower by 10 degrees Celsius or more than the gelling temperature of the latex, as required by claims 8, 10, and 13-15 (col. 8, lines 50-62). Furthermore, Wakamatsu shows that the prior art teaches improving smoothness of the intermediate layer by supercalendering, which is essentially contacting and pressing against a drum, as required by claim 11 (col. 2, lines 18-25). Forming a multilayer coating of plastic fillers and providing thereon a layer comprising pigments such as the thermosensitive layer is also mentioned as within the prior art by Wakamatsu, as required by claims 10 and 15 (col. 2, lines 8-14). The thermally reversible polymer used by Wakamatsu can include different water soluble polymers such as alkali salts of styrene/maleic anhydride copolymer or alkali salts of isobutylene/maleic anhydride copolymer, which are cationic and can incorporate polyvalent metal salts such as ammonium salt used in example 1 (col. 10, 15-17), as required by claims 4 and 6 (col. 7, lines 54-67).

5. Wakamatsu does not specifically teach that a separate treatment liquid at a specific temperature is applied concurrently with or before the coating liquid without drying, as required by claims 1 and 15.

6. It would have been obvious to a person ordinarily skilled in the art to apply the monomer liquid separately from the thermally reversible polymer, as required by claims 1 and 15. One would have been motivated to do this separately because the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the processes. *Ex parte Rubin,* 128 USPQ 440 (Bd. Pat. App. 1959).

7.

8. Wakamatsu does not teach that the porous layer has peaks in a pore distribution curve within the ranges required by claim 16. Also, Wakamatsu does not teach that a porous layer of fine particles and binder can be applied before the treating/thermosetting liquids, or that the fine particles can be applied after the thermosetting layer, as required by claims 10 and 12.

9. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to use the appropriate pore distribution and pore volume of the surface to be coated as required by claim 16. One would have been motivated to make this modification because it is well known in the art that paper and polymer substrates can be selected to have optimum specific pore distributions within the ranges required by claim 16 for the specific coating process taught by Wakamatsu. Also, the inorganic particles are sized 0.4-1.0 mircometer, which would suggest that pores of the same size or somewhat smaller would exist between the particles, which are within the ranges of preferred pore diameters required by claim 16.

10. It would have been obvious to a person ordinarily skilled in the art at the time of the invention to apply the fine particles and binder before the thermosetting layer or to apply the fine particles after the thermosetting layer, as required by claims 10 and 12. One would have been motivated to make these modifications because the transposition of process steps or the splitting of one step into two, where the processes are substantially identical or equivalent in terms of function, manner and result, was held to not patentably distinguish the processes. *Ex parte Rubin,* 128 USPQ 440 (Bd. Pat. App. 1959).

Conclusion

Claims 1-16 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Schiro whose telephone number is 571-270-5345. The examiner can normally be reached on Monday-Friday from 8:30 AM to 6 PM.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan Schiro
Art unit 1792

/Michael Barr/

Supervisory Patent Examiner, Art Unit 1792